

In re Patent Application of:  
**DI BERNARDO ET AL.**  
Serial No. Not Yet Assigned  
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9. A communication system comprising:  
a transmission channel;  
a signal source for providing a discrete signal;  
a chaotic modulator for modulating the discrete  
signal for transmitting over said transmission channel; and  
an incoherent discriminator for receiving the  
modulated discrete signal from said transmission channel.

10. A communication system according to Claim 9,  
wherein said incoherent discriminator comprises:  
a high-pass filter;  
a rectifier connected to an output of said high-pass  
filter; and  
a low-pass filter connected to an output of said  
rectifier.

11. A communication system according to Claim 10,  
wherein said incoherent discriminator further comprises a  
comparator connected to an output of said low-pass filter.

12. A communication system according to Claim 9,  
wherein said incoherent discriminator is self-synchronizing.

13. A communication system according to Claim 9,  
wherein said signal source generates a low logic value signal  
having associated therewith a chaotic evolution corresponding  
to a complete Chua's attractor.

14. A communication system according to Claim 9,  
wherein said incoherent discriminator comprises:  
a low-pass filter;

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21 a null-threshold comparator connected to an output of said low-pass filter for providing a square-wave output signal; and

a divider connected an output of said comparator for scaling the square-wave output signal.

15. A communication system according to Claim 14, wherein said signal source generates a low logic value signal that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

16. A communication system according to Claim 14, wherein said low-pass filter is a fourth order filter.

17. A communication system comprising:  
a digital signal source for providing a digital signal;

a chaotic modulator for modulating the digital signal for transmitting over a transmission channel; and

an incoherent discriminator for receiving the modulated digital signal from the transmission channel, said incoherent discriminator comprising

a high-pass filter,

a rectifier connected to an output of said high-pass filter, and

a low-pass filter connected to an output of said rectifier.

18. A communication system according to Claim 17, wherein said incoherent discriminator further comprises a comparator connected to an output of said low-pass filter.

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19. A communication system according to Claim 17,  
wherein said incoherent discriminator is self-synchronizing.

20. A communication system according to Claim 17,  
wherein said digital signal source generates a low logic value  
signal having associated therewith a chaotic evolution  
corresponding to a complete Chua's attractor.

21. A communication system comprising:  
a digital signal source for providing a digital  
signal;

a chaotic modulator for modulating the digital  
signal for transmitting over a transmission channel; and

an incoherent discriminator for receiving the  
modulated digital signal, said incoherent discriminator  
comprising

a low-pass filter,

a null-threshold comparator connected to an  
output of said low-pass filter for providing a  
square-wave output signal, and

a divider connected an output of said  
comparator for scaling the square-wave output  
signal.

22. A communication system according to Claim 21,  
wherein said digital signal source generates a low logic value  
signal having associated therewith a chaotic evolution  
corresponding to a complete Chua's attractor.

23. A communication system according to Claim 21,  
wherein said digital signal source generates a low logic value

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that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

24. A communication system according to Claim 21, wherein said low-pass filter is a fourth order filter.

25. A method for transmitting a signal over a transmission channel, the method comprising:  
generating a discrete signal;  
modulating the discrete signal using a chaotic modulator for transmitting over the transmission channel; and  
receiving the modulated discrete signal from the transmission channel using an incoherent discriminator.

26. A method according to Claim 25, wherein receiving the modulated discrete signal comprises:  
filtering the modulated discrete signal using a high-pass filter;  
rectifying the filtered signal from the high-pass filter; and  
filtering the rectified signal from the high-pass filter using a low-pass filter.

27. A method according to Claim 26, further comprising using a comparator for a generating square wave signal from the filtered signal provided by the low-pass filter.

28. A method according to Claim 25, wherein the incoherent discriminator is self-synchronizing.

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29. A method according to Claim 25, wherein a signal source generates a low logic value signal that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

30. A method according to Claim 25, further comprising:

filtering the modulated signal using a low-pass filter;

providing a square-wave output signal using a null-threshold comparator connected to an output of the low-pass filter; and

scaling the square-wave output signal using a divider connected an output of the comparator.

31. A method according to Claim 30, wherein the signal source generates a low logic value that is associated with a chaotic dynamics corresponding to a left-hand lobe of a Chua's attractor.

32. A method according to Claim 25, wherein the low-pass filter is a fourth order filter.

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**REMARKS**

It is believed that all of the claims are patentable over the prior art. For better readability and the Examiner's convenience, the newly submitted claims differ from the translated counterpart claims which are being canceled. The newly submitted claims do not represent changes or amendments that narrow the claim scope for any reason related to the statutory requirements for patentability. Accordingly, after